

SEQUENCE LISTING

<110> Reindl, Andreas
Mejia, Patricia Leon
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Gracia, Maria Araceli Cantero
Ebneth, Marcus
Herbers, Karin

<120> DNA sequence coding for a 1-deoxy-D-xylulose-5-phosphate synthase and overproduction thereof in plants

<130> 0817/000006/MEC

<140> US 09/762,045
<141> 2001-02-01

<150> PCT/EP99/05467
<151> 1999-07-30

<160> 33

<170> PatentIn Vers. 2.0/WordPerfect 6.0

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Ser Leu Val Thr Asp Leu Pro Ser Pro Cys Leu Lys Pro Asn Asn Asn
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Ser His Ser Asn Arg Arg Ala Lys Val Cys Ala Ser Leu Ala Glu Lys
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Gly Glu Tyr Tyr Ser Asn Arg Pro Pro Thr Pro Leu Leu Asp Thr Ile
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aac tac cca atc cac atg aaa aat ctt tct gtc aag gaa ctg aaa caa 288
Asn Tyr Pro Ile His Met Lys Asn Leu Ser Val Lys Glu Leu Lys Gln
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Phe Glu Glu Leu Gly Leu Tyr Tyr Ile Gly Pro Val Asp Gly His Asn			
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cct tac gcg gag aga gct gat gac aaa tac cat ggt gtt gtg aaa ttt Pro Tyr Ala Glu Arg Ala Asp Asp Lys Tyr His Gly Val Val Lys Phe 370 375 380	1152
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cca ttg gac cgt gct ctc att cgc agc tta gct aag tcg cac gag gtt Pro Leu Asp Arg Ala Leu Ile Arg Ser Leu Ala Lys Ser His Glu Val 625	630	635	1920
ctg atc acg gtt gaa gaa ggt tcc att gga ggt ttt ggc tcg cac gtt Leu Ile Thr Val Glu Glu Gly Ser Ile Gly Gly Phe Gly Ser His Val 645	650	655	1968
gtt cag ttt ctt gct ctc gat ggt ctt ctt gat ggc aaa ctc aag tgg Val Gln Phe Leu Ala Leu Asp Gly Leu Leu Asp Gly Lys Leu Lys Trp 660	665	670	2016
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 35 40 45

Ser His Ser Asn Arg Arg Ala Lys Val Cys Ala Ser Leu Ala Glu Lys
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Gly Glu Tyr Tyr Ser Asn Arg Pro Pro Thr Pro Leu Leu Asp Thr Ile
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Asn Tyr Pro Ile His Met Lys Asn Leu Ser Val Lys Glu Leu Lys Gln
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Leu Ser Asp Glu Leu Arg Ser Asp Val Ile Phe Asn Val Ser Lys Thr
 100 105 110

Gly Gly His Leu Gly Ser Ser Leu Gly Val Val Glu Leu Thr Val Ala
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Leu His Tyr Ile Phe Asn Thr Pro Gln Asp Lys Ile Leu Trp Asp Val
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Gly His Gln Ser Tyr Pro His Lys Ile Leu Thr Gly Arg Arg Gly Lys
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Ile Ser Ala Gly Leu Gly Met Ala Val Gly Arg Asp Leu Lys Gly Lys
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aac aac cat ctg gca cag ctg ctt tcc ggt aag ctt tac tct tca ctg		624	
Asn Asn His Leu Ala Gln Leu Leu Ser Gly Lys Leu Tyr Ser Ser Leu			
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Arg Glu Gly Gly Lys Lys Val Phe Ser Gly Val Pro Pro Ile Lys Glu			
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Leu Leu Lys Arg Thr Glu Glu His Ile Lys Gly Met Val Val Pro Gly			
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Thr Leu Phe Glu Glu Leu Gly Phe Asn Tyr Ile Gly Pro Val Asp Gly			
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His Asp Val Leu Gly Leu Ile Thr Thr Leu Lys Asn Met Arg Asp Leu			
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Glu Pro Ala Glu Lys Asp Pro Ile Thr Phe His Ala Val Pro Lys Phe			
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580

585

590

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His Phe Ala Ser Gly Leu Gly Thr Val Glu Leu Thr Val Ala Leu His
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Tyr Val Tyr Asn Thr Pro Phe Asp Gln Leu Ile Trp Asp Val Gly His
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Gln Ala Tyr Pro His Lys Ile Leu Thr Gly Arg Arg Asp Lys Ile Gly
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Thr Ile Arg Gln Lys Gly Leu His Pro Phe Pro Trp Arg Gly Glu
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Ser Glu Tyr Asp Val Leu Ser Val Gly His Ser Ser Thr Ser Ile Ser
 115 120 125

Ala Gly Ile Gly Ile Ala Val Ala Ala Glu Lys Glu Gly Lys Asn Arg
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Arg Thr Val Cys Val Ile Gly Asp Gly Ala Ile Thr Ala Gly Met Ala
 145 150 155 160

Phe Glu Ala Met Asn His Ala Gly Asp Ile Arg Pro Asp Met Leu Val
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Ile Leu Asn Asp Asn Glu Met Ser Ile Ser Glu Asn Val Gly Ala Leu
 180 185 190

Asn Asn His Leu Ala Gln Leu Leu Ser Gly Lys Leu Tyr Ser Ser Leu
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Arg Glu Gly Gly Lys Lys Val Phe Ser Gly Val Pro Pro Ile Lys Glu
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Leu Leu Lys Arg Thr Glu Glu His Ile Lys Gly Met Val Val Pro Gly
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 Lys Gly Pro Gln Phe Leu His Ile Met Thr Lys Lys Gly Arg Gly Tyr
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 Tyr Ser Lys Ile Phe Gly Asp Trp Leu Cys Glu Thr Ala Ala Lys Asp
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 Asn Lys Leu Met Ala Ile Thr Pro Ala Met Arg Glu Gly Ser Gly Met
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 Val Glu Phe Ser Arg Lys Phe Pro Asp Arg Tyr Phe Asp Val Ala Ile
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 Ala Glu Gln His Ala Val Thr Phe Ala Ala Gly Leu Ala Ile Gly Gly
 370 375 380
 Tyr Lys Pro Ile Val Ala Ile Tyr Ser Thr Phe Leu Gln Arg Ala Tyr
 385 390 395 400
 Asp Gln Val Leu His Asp Val Ala Ile Gln Lys Leu Pro Val Leu Phe
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 Ala Ile Asp Arg Ala Gly Ile Val Gly Ala Asp Gly Gln Thr His Gln
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 Gly Ala Phe Asp Leu Ser Tyr Leu Arg Cys Ile Pro Glu Met Val Ile
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 Met Thr Pro Ser Asp Glu Asn Glu Cys Arg Gln Met Leu Tyr Thr Gly
 450 455 460
 Tyr His Tyr Asn Asp Gly Pro Ser Ala Val Arg Tyr Pro Arg Gly Asn
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 485 490 495
 Gly Ile Val Lys Arg Arg Gly Glu Lys Leu Ala Ile Leu Asn Phe Gly
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530 535 540

Glu Met Ala Ala Ser His Glu Ala Leu Val Thr Val Glu Glu Asn Ala
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Ile Met Gly Gly Ala Gly Ser Gly Val Asn Glu Val Leu Met Ala His
565 570 575

Arg Lys Pro Val Pro Val Leu Asn Ile Gly Leu Pro Asp Phe Phe Ile
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Pro Gln Gly Thr Gln Glu Glu Met Arg Ala Glu Leu Gly Leu Asp Ala
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gagcaactccg atgcgcggct cccgcgcagg cagcaccagg agccggccgt ccagatgatc 180

gatcgccacg gcagcccctc cagtggtcat cctgtac atg cag ccc cac gcc atg 235
Met Gln Pro His Ala Met
1 5

ggc ggt gca ctg aac aca ttg tcc agc gga caa gcc aac tat tgc gca 283
Gly Gly Ala Leu Asn Thr Leu Ser Ser Gly Gln Ala Asn Tyr Cys Ala
10 15 20

cct tgc gga acg gag cga ccc tgc cgc cat gac gca gac cac aca cca 331
Pro Cys Gly Thr Glu Arg Pro Cys Arg His Asp Ala Asp His Thr Pro
25 30 35

cac tcc cga cac cgc ccg gca ggc cga ccc ctt ccc ggt gaa ggg aat 379
His Ser Arg His Arg Pro Ala Gly Arg Pro Leu Pro Gly Glu Gly Asn
40 45 50

gga cgc ggt cgt ctt cgc cgt agg caa cgc caa gca ggc cgc gca cta 427
Gly Arg Gly Arg Leu Arg Arg Arg Gln Arg Gln Ala Gly Arg Ala Leu
55 60 65 70

ctc cac cgc ctt cgg cat gca gct tgt ggc gta ctc cgg acc gga gaa 475
Leu His Arg Leu Arg His Ala Ala Cys Gly Val Leu Arg Thr Gly Glu
75 80 85

cgg cag ccg cga gac cgc ttc gta cgt cct cac caa cgg ctc ggc acg	523
Arg Gln Pro Arg Asp Arg Phe Val Arg Pro His Gln Arg Leu Gly Thr	
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95	100
ctt cgt cct cac ctc cgt cat caa gcc cgc cac ccc ctg ggg cca ctt	571
Leu Arg Pro His Leu Arg His Gln Ala Arg His Pro Leu Gly Pro Leu	
105	110
110	115
cct cgc cga cca tgt ggc cga gca cgg cga cgg cgt cgt cga cct cgc	619
Pro Arg Arg Pro Cys Gly Arg Ala Arg Arg Arg Arg Arg Pro Arg	
120	125
125	130
cat cga ggt ccc gga cgc cgc cgc cca cgc gta cgc gat cga gca	667
His Arg Gly Pro Gly Arg Pro Arg Arg Pro Arg Val Arg Asp Arg Ala	
135	140
140	145
145	150
cgg cgc ccg ctc ggt cgc cga gcc gta cga gct gaa gga cga gca cgg	715
Arg Arg Pro Leu Gly Arg Ala Val Arg Ala Glu Gly Arg Ala Arg	
155	160
160	165
cac ggt cgt cct cgc cgc gat cgc cac cta cgg caa gac ccc cca cac	763
His Gly Arg Pro Arg Arg Asp Arg His Leu Arg Gln Asp Pro Pro His	
170	175
175	180
cct cgt cga ccg gac cgg cta cga cgg ccc cta cct ccc cgg cta cgt	811
Pro Arg Arg Pro Asp Arg Leu Arg Arg Pro Leu Pro Pro Arg Leu Arg	
185	190
190	195
ggc cgc cgc ccc gat cgt cga acc gcc cgc cca ccc cac ctt cca ggc	859
Gly Arg Arg Pro Asp Arg Arg Thr Ala Arg Pro Pro His Leu Pro Gly	
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205	210
cat cga cca ctg cgt cgg caa cgt cga gct cgg ccc gat gaa cga atg	907
His Arg Pro Leu Arg Arg Gln Arg Arg Ala Arg Pro Asp Glu Arg Met	
215	220
220	225
225	230
ggt cgg ctt cta caa caa ggt cat ggg ctt cac gaa cat gaa gga gtt	955
Gly Arg Leu Leu Gln Gln Gly His Gly Leu His Glu His Glu Gly Val	
235	240
240	245
cgt ggg cga cga cat cgc gac cga gta ctc ggc gct gat gtc gaa ggt	1003
Arg Gly Arg Arg His Arg Asp Arg Val Leu Gly Ala Asp Val Glu Gly	
250	255
255	260
cgt ggc cga cgg cac gct caa ggt caa gtt ccc gat caa cga gcc cgc	1051
Arg Gly Arg Arg His Ala Gln Gly Gln Val Pro Asp Gln Arg Ala Arg	
265	270
270	275
cct cgc caa gaa gaa gtc cca gat cga cga gta cct gga gtt cta cgg	1099
Pro Arg Gln Glu Glu Val Pro Asp Arg Arg Val Pro Gly Val Leu Arg	
280	285
285	290
cgg cgc ggg cgt cca gca cat cgc gct gaa cac ggg tga catcgctcgag	1148
Arg Arg Gly Arg Pro Ala His Arg Ala Glu His Gly	
295	300
300	305
acggtaacgca cgatgcgcgc cgccggcgctc cagttcctgg acacgccccga ctcgtactac	1208
gacaccctcg gggagtgggt gggcgacacc cgcgtccccg tcgacaccct gcgcgagctg	1268

aagatcctcg cggaccgcga cgaggacggc tatctgctcc agatcttac caagccggc 1328
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 ctgttaggcgg cgccggccgg g 1469

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Asp Ala Asp His Thr Pro His Ser Arg His Arg Pro Ala Gly Arg Pro
 35 40 45

Leu Pro Gly Glu Gly Asn Gly Arg Gly Arg Leu Arg Arg Arg Gln Arg
 50 55 60

Gln Ala Gly Arg Ala Leu Leu His Arg Leu Arg His Ala Ala Cys Gly
 65 70 75 80

Val Leu Arg Thr Gly Glu Arg Gln Pro Arg Asp Arg Phe Val Arg Pro
 85 90 95

His Gln Arg Leu Gly Thr Leu Arg Pro His Leu Arg His Gln Ala Arg
 100 105 110

His Pro Leu Gly Pro Leu Pro Arg Arg Pro Cys Gly Arg Ala Arg Arg
 115 120 125

Arg Arg Arg Arg Pro Arg His Arg Gly Pro Gly Arg Pro Arg Arg Pro
 130 135 140

Arg Val Arg Asp Arg Ala Arg Arg Pro Leu Gly Arg Arg Ala Val Arg
 145 150 155 160

Ala Glu Gly Arg Ala Arg His Gly Arg Pro Arg Arg Asp Arg His Leu
 165 170 175

Arg Gln Asp Pro Pro His Pro Arg Arg Pro Asp Arg Leu Arg Arg Pro
 180 185 190

Leu Pro Pro Arg Leu Arg Gly Arg Arg Pro Asp Arg Arg Thr Ala Arg
 195 200 205

Pro Pro His Leu Pro Gly His Arg Pro Leu Arg Arg Gln Arg Arg Ala
 210 215 220

Arg Pro Asp Glu Arg Met Gly Arg Leu Leu Gln Gln Gly His Gly Leu
 225 230 235 240
 His Glu His Glu Gly Val Arg Gly Arg Arg His Arg Asp Arg Val Leu
 245 250 255
 Gly Ala Asp Val Glu Gly Arg Gly Arg Arg His Ala Gln Gly Gln Val
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 Pro Asp Gln Arg Ala Arg Pro Arg Gln Glu Glu Val Pro Asp Arg Arg
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 His Gly
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<400> 7

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Met	Ala	Thr	Thr	Val	Thr	Leu	Lys	Ser	Phe	Thr	Gly	Leu	Arg	Gln	Ser		
1															15		
tca	acg	gag	caa	aca	aac	ttc	gtc	tct	cat	gta	ccg	tca	tca	ctt	tct		96
Ser	Thr	Glu	Gln	Thr	Asn	Phe	Val	Ser	His	Val	Pro	Ser	Ser	Leu	Ser		
															30		
ctc	cct	caa	cga	cg	acc	tct	ctc	cga	gta	acc	gca	gcc	agg	gcc	act		144
Leu	Pro	Gln	Arg	Arg	Thr	Ser	Leu	Arg	Val	Thr	Ala	Ala	Arg	Ala	Thr		
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ccc	aaa	ctc	tcc	aac	cgt	aaa	ctc	cgt	gtc	gcc	gtc	atc	gg	gg	g		192
Pro	Lys	Leu	Ser	Asn	Arg	Lys	Leu	Arg	Val	Ala	Ile	Gly	Gly	Gly			
															60		
cca	gca	ggc	gca	gct	gca	gag	act	cta	gca	caa	gga	gga	atc	gag			240
Pro	Ala	Gly	Gly	Ala	Ala	Glu	Thr	Leu	Ala	Gln	Gly	Gly	Ile	Glu			
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acg	att	ctc	atc	gag	cgt	aag	atg	gac	aat	tgc	aag	cct	tgc	gg	gc		288
Thr	Ile	Leu	Ile	Glu	Arg	Lys	Met	Asp	Asn	Cys	Lys	Pro	Cys	Gly	Gly		
															95		
gcg	att	cct	ctc	tgt	atg	gtc	gga	gaa	ttc	aac	ttg	ccg	ttg	gat	att		336
Ala	Ile	Pro	Leu	Cys	Met	Val	Gly	Glu	Phe	Asn	Leu	Pro	Leu	Asp	Ile		
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att	gat	cg	aga	gt	ac	a	g	a	g	at	tc	cc	tc	aa	at		384

Ile	Asp	Arg	Arg	Val	Thr	Lys	Met	Lys	Met	Ile	Ser	Pro	Ser	Asn	Ile
115							120							125	
gct gtt gat att ggt cgt acg ctt aag gag cat gag tat ata ggt atg															432
Ala	Val	Asp	Ile	Gly	Arg	Thr	Leu	Lys	Glu	Tyr	Ile	Gly	Met		
130							135							140	
gtg aga aga gaa gtt ctt gat gct tat ctg aga gag aga gct gag aag															480
Val	Arg	Arg	Glu	Val	Leu	Asp	Ala	Tyr	Leu	Arg	Glu	Arg	Ala	Glu	Lys
145							150							155	
agt gga gcc act gtg att aac ggt ctc ttc ctt aag atg gat cat ccg															528
Ser	Gly	Ala	Thr	Val	Ile	Asn	Gly	Leu	Phe	Leu	Lys	Met	Asp	His	Pro
														165	170
gag aat tgg gac tcg ccg tac act ttg cat tac act gag tac gat ggt															576
Glu	Asn	Trp	Asp	Ser	Pro	Tyr	Thr	Leu	His	Tyr	Thr	Glu	Tyr	Asp	Gly
														180	185
aaa act gga gct aca ggg acg aag aaa aca atg gag gtt gat gct gtc															624
Lys	Thr	Gly	Ala	Thr	Gly	Thr	Lys	Lys	Thr	Met	Glu	Val	Asp	Ala	Val
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att gga gct gat gga gct aac tct agg gtt gct aaa tct att gat gct															672
Ile	Gly	Ala	Asp	Gly	Ala	Asn	Ser	Arg	Val	Ala	Lys	Ser	Ile	Asp	Ala
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ggc gat tac gac tac gca att gca ttt cag gag agg att agg att cct															720
Gly	Asp	Tyr	Asp	Tyr	Ala	Ile	Ala	Phe	Gln	Glu	Arg	Ile	Arg	Ile	Pro
														225	230
gat gag aaa atg act tac tat gag gat tta gct gag atg tat gtt gga															768
Asp	Glu	Lys	Met	Thr	Tyr	Tyr	Glu	Asp	Leu	Ala	Glu	Met	Tyr	Val	Gly
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gat gat gtg tcg ccg gat ttc tat ggt tgg gtg ttc cct aag tgc gac															816
Asp	Asp	Val	Ser	Pro	Asp	Phe	Tyr	Gly	Trp	Val	Phe	Pro	Lys	Cys	Asp
														260	265
cat gta gct gtt gga aca ggt act gtg act cac aaa ggt gac atc aag															864
His	Val	Ala	Val	Gly	Thr	Gly	Thr	Val	Thr	His	Lys	Gly	Asp	Ile	Lys
														275	280
aag ttc cag ctc gcg acc aga aac aga gct aag gac aag att ctt gga															912
Lys	Phe	Gln	Leu	Ala	Thr	Arg	Asn	Arg	Ala	Lys	Asp	Lys	Ile	Leu	Gly
														290	295
ggg aag atc atc cgt gtg gag gct cat ccg att cct gaa cat ccg aga															960
Gly	Lys	Ile	Ile	Arg	Val	Glu	Ala	His	Pro	Ile	Pro	Glu	His	Pro	Arg
														305	310
cca cgt agg ctc tcg aaa cgt gtg gct ctt gta ggt gat gct gca ggg															1008
Pro	Arg	Arg	Leu	Ser	Lys	Arg	Val	Ala	Leu	Val	Gly	Asp	Ala	Ala	Gly
														325	330
tat gtg act aaa tgc tct ggt gaa ggg atc tac ttt gct gct aag agt															1056
Tyr	Val	Thr	Lys	Cys	Ser	Gly	Glu	Gly	Ile	Tyr	Phe	Ala	Ala	Lys	Ser
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															350

gga aga atg tgt gct gaa gcc att gtc gaa ggt tca cag aat ggt aag		1104
Gly Arg Met Cys Ala Glu Ala Ile Val Glu Gly Ser Gln Asn Gly Lys		
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aag atg att gac gaa ggg gac ttg agg aag tac ttg gag aaa tgg gat		1152
Lys Met Ile Asp Glu Gly Asp Leu Arg Lys Tyr Leu Glu Lys Trp Asp		
370	375	380
aag aca tac ttg cct acc tac agg gta ctt gat gtg ttg cag aaa gtg		1200
Lys Thr Tyr Leu Pro Thr Tyr Arg Val Leu Asp Val Leu Gln Lys Val		
385	390	395
ttt tac aga tca aat ccg gct aga gaa gcg ttt gtg gag atg tgt aat		1248
Phe Tyr Arg Ser Asn Pro Ala Arg Glu Ala Phe Val Glu Met Cys Asn		
405	410	415
gat gag tat gtt cag aag atg aca ttc gat agc tat ctg tac aag cg		1296
Asp Glu Tyr Val Gln Lys Met Thr Phe Asp Ser Tyr Leu Tyr Lys Arg		
420	425	430
gtt gcg ccg ggt agt cct ttg gag gat atc aag ttg gct gtg aac acc		1344
Val Ala Pro Gly Ser Pro Leu Glu Asp Ile Lys Leu Ala Val Asn Thr		
435	440	445
att gga agt ttg gtt agg gct aat gct cta agg aga gag att gag aag		1392
Ile Gly Ser Leu Val Arg Ala Asn Ala Leu Arg Arg Glu Ile Glu Lys		
450	455	460
ctt agt gtt taagaaaacaataatgaggtctatcccttctttcatctc		1441
Leu Ser Val		
465		
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Leu Pro Gln Arg Arg Thr Ser Leu Arg Val Thr Ala Ala Arg Ala Thr			
35	40	45	
Pro Lys Leu Ser Asn Arg Lys Leu Arg Val Ala Val Ile Gly Gly Gly			
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Pro Ala Gly Gly Ala Ala Ala Glu Thr Leu Ala Gln Gly Gly Ile Glu			
65	70	75	80
Thr Ile Leu Ile Glu Arg Lys Met Asp Asn Cys Lys Pro Cys Gly Gly			

85	90	95
Ala Ile Pro Leu Cys Met Val Gly Glu Phe Asn Leu Pro Leu Asp Ile		
100	105	110
Ile Asp Arg Arg Val Thr Lys Met Lys Met Ile Ser Pro Ser Asn Ile		
115	120	125
Ala Val Asp Ile Gly Arg Thr Leu Lys Glu His Glu Tyr Ile Gly Met		
130	135	140
Val Arg Arg Glu Val Leu Asp Ala Tyr Leu Arg Glu Arg Ala Glu Lys		
145	150	155
160		
Ser Gly Ala Thr Val Ile Asn Gly Leu Phe Leu Lys Met Asp His Pro		
165	170	175
Glu Asn Trp Asp Ser Pro Tyr Thr Leu His Tyr Thr Glu Tyr Asp Gly		
180	185	190
Lys Thr Gly Ala Thr Gly Thr Lys Lys Thr Met Glu Val Asp Ala Val		
195	200	205
Ile Gly Ala Asp Gly Ala Asn Ser Arg Val Ala Lys Ser Ile Asp Ala		
210	215	220
Gly Asp Tyr Asp Tyr Ala Ile Ala Phe Gln Glu Arg Ile Arg Ile Pro		
225	230	235
240		
Asp Glu Lys Met Thr Tyr Tyr Glu Asp Leu Ala Glu Met Tyr Val Gly		
245	250	255
Asp Asp Val Ser Pro Asp Phe Tyr Gly Trp Val Phe Pro Lys Cys Asp		
260	265	270
His Val Ala Val Gly Thr Gly Thr Val Thr His Lys Gly Asp Ile Lys		
275	280	285
Lys Phe Gln Leu Ala Thr Arg Asn Arg Ala Lys Asp Lys Ile Leu Gly		
290	295	300
Gly Lys Ile Ile Arg Val Glu Ala His Pro Ile Pro Glu His Pro Arg		
305	310	315
320		
Pro Arg Arg Leu Ser Lys Arg Val Ala Leu Val Gly Asp Ala Ala Gly		
325	330	335
Tyr Val Thr Lys Cys Ser Gly Glu Gly Ile Tyr Phe Ala Ala Lys Ser		
340	345	350
Gly Arg Met Cys Ala Glu Ala Ile Val Glu Gly Ser Gln Asn Gly Lys		
355	360	365
Lys Met Ile Asp Glu Gly Asp Leu Arg Lys Tyr Leu Glu Lys Trp Asp		
370	375	380
Lys Thr Tyr Leu Pro Thr Tyr Arg Val Leu Asp Val Leu Gln Lys Val		
385	390	395
400		

Phe Tyr Arg Ser Asn Pro Ala Arg Glu Ala Phe Val Glu Met Cys Asn
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Asp Glu Tyr Val Gln Lys Met Thr Phe Asp Ser Tyr Leu Tyr Lys Arg
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Val Ala Pro Gly Ser Pro Leu Glu Asp Ile Lys Leu Ala Val Asn Thr
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Leu Ser Val
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